

ADDITIONS TO THE FLORAS OF COLORADO AND NEW MEXICO

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ABSTRACT

Zigadenus virescens (Kunth) Macbr. is added to the west-slope flora of Colorado. Thirteen new records are added to the New Mexico flora including *Artemisia pygmaea* A. Gray, *Berteroa incana* (L.) DC., *Cleomella palmerana* M.E. Jones, *Eleocharis bella* (Piper) Svenson, *Epilobium lactiflorum* Hausskn., *Hackelia ursina* (Greene ex A. Gray) I.M. Johnston var. *pustulosa* (Macbr.) J.L. Gentry, *Hypoxis hirsuta* (L.) Cov., *Huperzia lucidula* (Michx.) Trev., *Lycopodium clavatum* L., *Malacothrix glabrata* (D.C. Eat.) A. Gray, *Senecio amplexans* A. Gray var. *holmii* (Greene) Harrington, *Senecio integerrimus* Nutt., and *Solidago speciosa* Nutt. var. *pallida* Porter. All but one are native North American taxa.

KEY WORDS: Flora, Colorado, New Mexico

Botanical field surveys and curatorial work at the University of New Mexico Herbarium (UNM) by the authors have resulted in one new record for the Colorado flora and thirteen additional records of New Mexico vascular plants. All but one are native North American taxa and seven represent significant disjunctions in their previously known geographic ranges. This report is prepared as a contribution to the *Working Index of New Mexico Vascular Plant Names* (Roalson & Allred 1995) and to

assist the Flora of North America Project. Nomenclature conforms to those two floristic endeavors.

COLORADO

LILIACEAE

Zigadenus virescens (Kunth) J.F. Macbr. - Eagle Co., Tennessee Pass, 3100-3500 m, 4-6 Sept 1915, *Eggleston 11801* (COLO). Gunnison Co., Rustler's Gulch above Gothic, 3200 m., 28 Aug 1938, *Ewan 11796* (COLO); West Elk Mountains, summit of McClure Pass, 1.3 km from main Hwy along dirt road following the ridge eastward, in wet depressions in aspen forest, elev: 2670 m, 10 July 1994, *W.A. Weber & R.C. Wittmann 19070* (COLO,UNM). Pitkin Co., W of Redstone, 3050 m, 22 Aug 1980, *Fenton s.n.* (COLO); White River National Forest, Maroon Bells Snowmass Wilderness, Hell Roaring Creek, T9S R87W Section 31, Subalpine meadow, ca. 3350 m, 20 Aug 1995, *T. Hogan 2968* (COLO,UNM). Routt Co., Grand Lake, 4 July 1937, *K.R. Johnson 571* (COLO); Diamond Park Road, 2 km N of Seedhouse G.S., 45 km N of Steamboat Springs, 18 July 1951, *Weber 6789* (COLO).

Comment: The first Colorado records of a predominantly Madrean species that was previously known from México, southeastern Arizona, and southwestern New Mexico (Hess & Sivinski 1995). These collections represent an approximately 400 km northern disjunction from the nearest known population in the Datil Mountains of northern Catron County, New Mexico. This species is occasionally sympatric and frequently confused with *Zigadenus elegans* Pursh (= *Anticlea elegans* [Pursh] Rydb. of some Colorado authors). *Zigadenus virescens* is distinguished by its campanulate corolla, cernuous flowers at anthesis, and stamens longer than the tepals as compared to the rotate-campanulate corolla, erect flowering pedicels, and usually longer tepals of *Z. elegans*.

NEW MEXICO

ASTERACEAE

Artemisia pygmaea A. Gray - McKinley Co., Fort Wingate, NE side of military reservation ca. 1 km NW of Wingate High School, elev: 2100 m, locally common on sodic, red clay of the Chinle Shale Formation with *Sporobolus airoides*, *Eriogonum microthecum*, and *Atriplex obovata*, 31 May 1994, *R. Sivinski & K. Lightfoot 2710* (UNM); same location, 26 Oct 1994, *W. Hevron 2261* (UNM); 1 km N of frontage road between I-40 and Iyanbito, T15N R16W Section 14, on red clayey sand of Chinle Fm with *Chrysothamnus viscidiflorus*, *Bouteloua gracilis*, and scattered *Juniperus monosperma*, 26 Oct 1994, *W. Hevron 2262* (UNM).

Comment: First records for New Mexico and a nearly 200 km southern disjunction from the populations vouchered in southwestern Colorado (*Anderson 89-21 & 90-34* [COLO]). Welsh *et al.* (1993) observed this sagebrush on unique substrates that provide habitat for other rare plant species. The Fort Wingate, New Mexico, population is consistent by occurring with the relatively rare *Phacelia cephalotes* A. Gray and the narrow endemic *Erigeron sivinskii* Nesom.

Malacothrix glabrata (D.C. Eat. ex A. Gray) A. Gray - Hidalgo Co., Peloncillo Mountains, ca. 56 km SSW of Animas, T33S R21W Section 16 SW1/4, elev: 1640 m, rare on flat, rocky (volcanic) hilltop with *Bouteloua hirsuta*, *Agave palmeri*, and *Malacothrix fendleri*, 26 Apr 1993, W. Dunmire 1223 (UNM). Luna Co., on NE footslope of Taylor Mountain ca. 10 km ENE of Faywood Hot spring, T20S R10W Section 17 NE1/4, elev: 1600 m, locally rare on rhyolitic soils in desert grassland with *Pleuraphis mutica*, *Bouteloua curtipendula*, *Malacothrix fendleri*, *Ephedra*, and *Fallugia*, 12 Apr 1995, R. Sivinski 2949 (UNM).

Comment: First records for New Mexico and an eastern range extension from Graham County, Arizona (Kearney & Peebles 1951).

Senecio amplexens A. Gray var. *holmii* (Greene) Harrington - Taos Co., Sangre de Cristo Mountains, west slope of Wheeler Peak, elev: 3650 m, scree slopes at treeline, 20 Jul 1986, C.F. Keller 328.2C (UNM).

Comment: First record for New Mexico. A high elevation, short-stature variety (with basal leaves dominant) previously thought to be a Colorado endemic (Weber 1990). Variety *amplexens* also occurs in northern New Mexico, but at different localities and usually in subalpine habitats.

Senecio integerrimus Nutt. var. *integerrimus* - Rio Arriba Co., Hwy 84 N of Chama and 1.6 km S of NM/CO border, moist meadow in open piñon-juniper habitat with *Delphinium nelsonii* and *Phlox caryophylla*, 21 May 1991, C.F. Keller 656.3 (UNM).

Comment: First record for New Mexico and a minor southern range extension for this widespread, western North American species.

Solidago speciosa Nutt. var. *pallida* Porter - Los Alamos Co., Jemez Mountains, Los Alamos, S rim of Pajarito Canyon, 0.5 km E of State Route 4, elev: 2360 m, on dry ridge with *Pinus ponderosa*, 8 Oct 1990, C.F. Keller 653 (UNM). San Miguel Co., Sangre de Cristo Mountains, Gallinas Canyon west of Las Vegas, T17N R14E Section 14, elev: 2300 m, roadside slopes and ditches, 29 Aug 1994, C.F. Keller 938C (UNM).

Comment: First records for New Mexico. The San Miguel County collection is a minor southern range extension from the east slope of the Colorado Rockies (Weber 1990). The Jemez Mountain record represents a 100 km western range extension for the species.

BORAGINACEAE

Hackelia ursina (Greene ex Gray) I.M. Johnston var. *pustulosa* (Macbr.) J.L. Gentry - Hidalgo Co., Animas Mountains, lower Indian Creek Canyon, elev: 1850 m, 13 Sept 1975, W. Wagner 1507 (UNM); Animas Mountains, unnamed canyon above Eckels Tank, T32S R19W Section 8 SW1/4, elev: 1860 m, locally rare on N-facing slope of rhyolitic soil in upper encinal of *Quercus arizonica*, *Q. hypoleucoides*, *Rhus trilobata*, and *Yucca schottii*, 21 Aug 1993, R. Sivinski & L. McIntosh 2531 (UNM).

Comment: First records of this variety in New Mexico. Variety *pustulosa* was previously known from western Chihuahua and southeastern Arizona (Gentry 1974). Variety *ursina* is common in the Black Range and Mogollon Mountains of southwestern New Mexico. Their ranges overlap at the Animas Mountains in the New Mexico boot heel and the Chiricahua Mountains in adjacent Arizona.

BRASSICACEAE

Berteroa incana (L.) DC. - Sandoval Co., Jemez Mountains, La Cueva, intersection of State Route 4 and 126, elev: 2320 m, waste ground at roadside, 5 Aug 1995, C.F. Keller 976C (UNM).

Comment: First New Mexico record of this Eurasian weed. An adventive species that is established in North America from Nova Scotia to Washington (Great Plains Flora Assoc. 1986) and is spreading to southern montane areas in Colorado (Weber 1990) and New Mexico.

CAPPARACEAE

Cleomella palmerana M.E. Jones - San Juan Co., west of Rattlesnake, 26 Apr 1947, O. Clark 14107 (UNM). Identified and annotated by Hugh Iltis (WIS), 1983.

Comment: First record for New Mexico and a minor southern range extension from southwestern Colorado (Iltis, letter to Lowrey).

CYPERACEAE

Eleocharis bella (Piper) Svenson - Rio Arriba Co., Tusas Mountains, Posos Lake, T27N R8E Section 15, elev: 2630 m, abundant on shallow lake bed within conifer forest, on drying mud with *Plagiobothrys scouleri* and *Veronica*, 6 Aug 1991, R. Sivinski 1771 (NMC, UNM); Tusas Ridge west of Petaca, T26N R9E Section 6 NW1/4, on mud of small impoundment created by logging disturbance in ponderosa pine forest, 30 July 1992, R. Sivinski 1928 (UNM). Sierra Co., Black Range, pond

at head of Sawmill Canyon, T10S R10W Section 20 NW1/4, elev: 2350 m, 16 Aug 1982, *R. Fletcher & C. Barnard* 6688 (UNM).

Comment: Although Cronquist *et al.* (1977) acknowledged this species as occurring in New Mexico, Martin & Hutchins (1980) included it in their *Flora of New Mexico* as expected in the southwestern part of the state, but with no certain records. These collections document the species for southwestern New Mexico and also the north-central part of the state.

LILIACEAE

Hypoxis hirsuta (L.) Cov. - Cibola Co., Zuni Mountains, Agua Fria, 26 km W of Grants, T10N R12W Section 34, ponderosa pine forest, elev: 2440 m, 22 Aug 1963, *K.K. Goodrow* 756 (UNM). Identified and annotated by Doug Henderson (ID) and Anita Cholewa (MIN), 1990.

Comment: Martin & Hutchins (1980) included this species in their *Flora of New Mexico* as expected in the northeastern corner of the state. This collection documents the species for New Mexico, but in the northwestern part of the state. The nearest previous collections are from southeastern Colorado (Weber 1990).

LYCOPODIACEAE

Huperzia lucidula (Michx.) Trev. - Santa Fe Co., 4 km N, 4.4 km E from Santa Fe Plaza on ski run road, 9 Aug 1961, *C.K. Dixon* A-289 (UNM). Identified and annotated by Michael Windham (UT), 1990.

Comment: First record of the genus and species for New Mexico. The range of this species is illustrated in the *Flora of North America* as east of the Mississippi River Valley (Flora of North America Editorial Committee 1993). This New Mexico collection represents a significant disjunction to the southern Rocky Mountains.

Lycopodium clavatum L. - Sandoval Co., Sandia Mountains, N of Sandia Crest on trail through moist Canadian forest, elev: 3050 m, 23 Apr 1965, *C.B. Jones* 12-2 (UNM). Identified and annotated by Michael Windham (UT), 1990.

Comment: First record of this species for New Mexico. The North American distribution of this cosmopolitan species is the northeastern United States, southern Canada, and the Pacific northwest (Flora of North America Editorial Committee 1993). It also occurs in the mountains of México. This New Mexico collection represents a significant disjunction to interior southwestern North America.

ONAGRACEAE

Epilobium lactiflorum Hausskn. - Taos Co., woods on west exposure along trail to Wheeler Peak, 36°33' 20" N 105°25' 45" W, elev: 3370-3400 m, 8 July 1967, H. Mackay 5T-214 (UNM). Identified and annotated by Peter Hoch (MO), 1977.

Comment: First record for New Mexico and a southern range extension from the subalpine flora of Colorado (Weber 1990).

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